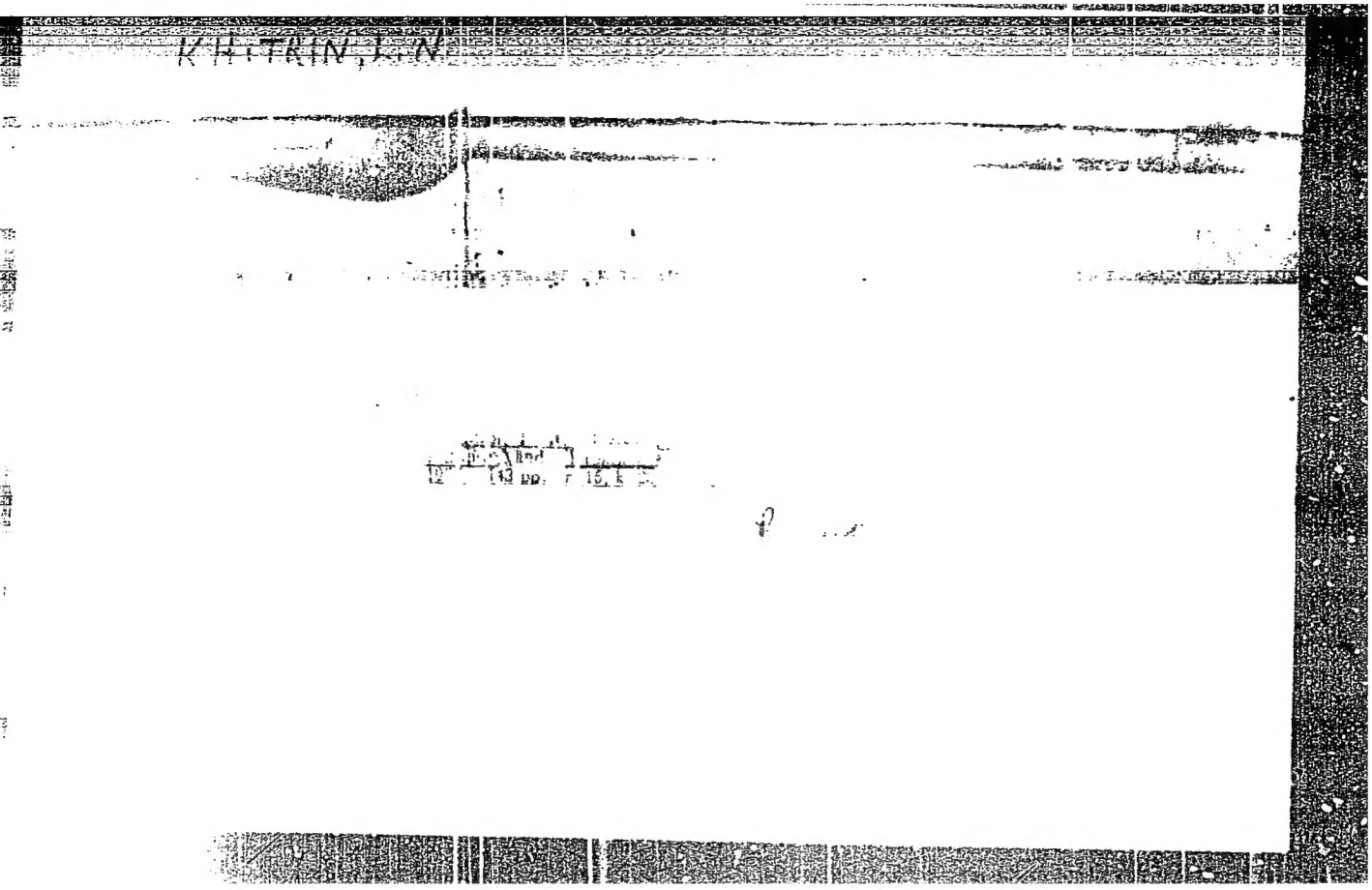
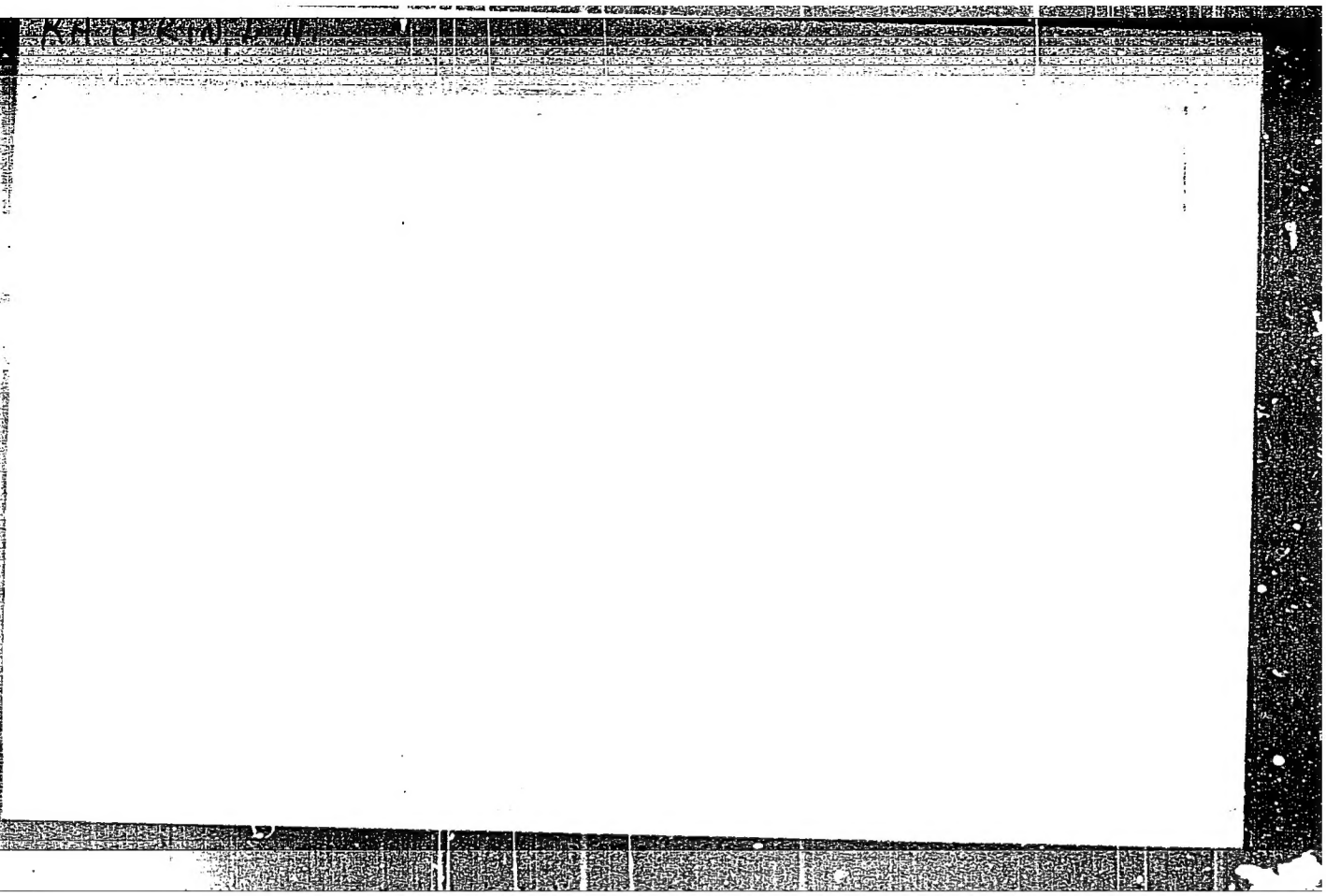


KHITRIN, Lev Nikolayevich; POPOV, V.A., redaktor; MEZ'YER, V.V., tekhnicheskiy redaktor

[Combustion and explosion physics] Fizika goreniia i vzryva. [Moskva] Izd-vo Mosk. univ., 1957. 442 p.
(Combustion) (Explosions) (MLRA 10:4)



KHITRIN, L.N.

AUTHOR: GOL'DENBERG,S.A., KHITRIN,L.N. (Moscow) PA - 3081

TITLE: The Heat Theory of the Ignition of Gas Mixtures and Phenomena in the Boundary Area. (Teplovaya teoriya zazhiganiya gazovykh smesey i predel'nyye yavleniya, Russian)

PERIODICAL: Izvestiia Akad.Nauk SSSR, Otdel.Tekhn., 1957, Vol 21, Nr 3, pp 142-155 (U.S.S.R.)

Received: 6 / 1957 Reviewed: 7 / 1957

ABSTRACT: In the introduction a survey of the entire field and the investigations carried out up to the present are given. Then the problem of ignition by a glowing body is handled and a formula is derived for a vessel with flat parallel walls (in the distance l from one another) with the temperatures T_ξ and T_0 (cold wall), which determines the ratio among the values on the ignition boundary.

The formula reads: $$\frac{T_s - T_0}{1} = \left(\frac{2q}{\lambda} \int_{T_\xi}^{T_s} w(c,T)\, dT \right)^{1/2}$$

T_s denotes the wall temperature, T_ξ is the temperature of the exterior limit of the layer ξ, q - the heat effect, $w(c,T)$ - the expression for the reaction and λ - the heat conduction coefficient of the mixture. The ignition in a general case was investigated and

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The Heat Theory of the Ignition of Gas Mixtures and Phenomena in the Boundary Area.

shows that the fundamental problem of the calculation consists of the correct determination of the value of J.

($J = \int_{T_k}^{T_s} w(c,T)\, dT$). For the investigation of the ignition conditions with a glowing body the boundary conditions for the reaction of the first and second order were deduced. It shows that one can obtain on the basis of these equations reliable values for the fundamental kinetic characteristics of fuel gases k_o (velocity constants) and E (energy for the activation of the chemical process) can be obtained. From the general formula previously derived for the boundary conditions, the relations for the boundaries of the concentration of the ignition are deduced. The general calculation method here developed for the boundaries of the concentration make it possible to calculate the values of the effective kinetic characteristics in the flame action in the gas mixture. With the aid of these characteristics and the law of heat exchange the values of the critical parameter for ignition under various conditions can be calculated. The

Card 2/3

KHITRIN, L. N.

"Some Consequences of the Thermal Theory of Ignition in a Fast Flow."

paper submitted at 7th International Symposium on Combustion, London/Oxford. 27 Aug - 3 Sep 58.

KHITRIN, L.N

ф 2,3,7, (thermot.)

PHASE I BOOK EXPLOITATION 626

Akademiya nauk SSSR. Energeticheskiy institut

Issledovaniya protsessov goreniya; sbornik statey po rabotam, vypolnennym v Energeticheskom institute im. G.M. Krzhizhanovskiy AN SSSR (Study of Combustion Processes; Collection of Articles on Work Done by the Power Institute imeni G.M. Krzhizhanovskogo AS USSR) Moscow, Izd-vo AN SSSR, 1958. 123 p. 3,300 copies printed.

Resp. Ed.: Khitrin, L.N., Corresponding Member, AS USSR; Ed. of Publishing House: Pobedimskiy, V.V.; Tech. Ed.: Polesitskaya, S.M.

PURPOSE: This book is meant for scientists and engineers working in the field of fuel combustion.

COVERAGE: This collection of articles represents recent research in the field of combustion processes performed at the Institute of Power Engineering imeni G.M. Krzhizhanovskiy, AS USSR. Materials studied were gaseous and vapor fuels. Problems considered were:

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ignition of gaseous mixtures and stabilization of the flame front; conditions for igniting homogeneous mixtures; performance of a tunnel burner; booster method for tunnel burners, in particular for the burning of gases with low calorific values; regularities of flame propagation in laminary and turbulent flows; effect of preheating and fuel composition on the rate of flame propagation; heat-engineering calculations of processes in furnaces, boilers, and other devices, and methods for the estimation of their performance. A new photopyrometric method is described which serves for measuring the temperature of burning-coal particles in motion.

TABLE OF CONTENTS:

Study of Combustion Processes (Cont.) 626

Khitrin, L.N. and Gold'denberg, S.A. (Laboratory for the Intensification of Furnace Processes) Ignition of Gaseous Mixtures and Critical Characteristics 5

The authors based their research on the assumptions of Ya. B. Zel'dovich for the determination of ignition characteristics, such as: concentration limits, boundary flame velocities and flame stabilization criterion. Heated rods or spheres were used as ignition sources. N.N. Semenov [Ref. 2] and L.A. Vulis [Ref. 4] are also mentioned as contributors to combustion theory. The activation energy for methane-air mixture (E=35000) is quoted from the work of V.I. Andreyev and L.A Volodina [p. 36]. There are 9 figures, 14 equations, and 4 Soviet references.

Iyevlev, V.N. and Solov'yeva, L.S. (Laboratory for the Intensification of Furnace Processes). Experimental Study of Gas Combustion Processes in Tunnel Burners 14

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Study of Combustion Processes (Cont.) 626

Khitrin, L.N. and Gol'denberg, S.A. (Laboratory for the Intensification of Furnace Processes). Effect of Preheating the Combustible Mixture and of the Ambient Pressure on Flame Stabliziation Limits 39

The authors studied the effect of the initial temperature and of pressure on flame stabilization. Experimental data are given from the work of L.A. Volodina and V.I. Andreyev at the Power Engineering Institute, AS USSR. There is good agreement of experimental data with theoretical computations. Certain deviations are due to the characteristics of the stabilizers used. The stability parameters are derived from the fuel to air ratio $\left(\frac{F}{A}\right)$ according to Longwell [Ref. 10] and Friedman [Ref. 11]. There are 3 figures, 12 equations, and 13 references, 4 Soviet, and 9 English.

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for a constant mass velocity (Re = const.) and varying pressure, the turbulent flame velocity increases according to the law $U_T \simeq \frac{1}{p^{\frac{1}{4}}}$ analogous to the variation of normal flame velocity.

The turbulent flame velocity decreases with the drop in pressure $U_T \simeq p^{\frac{1}{2}}$ at a constant flow velocity. When conditions approximate isotropic turbulence, viscosity of the medium is the main factor modifying the flame propagation velocity at variable pressures. There are 12 figures and 4 references, 3 Soviet and 1 German.

Khitrin, L.N., Golovina, Ye. S. and Sorokina, A.V. (Laboratory of Combustion Physics). Effect of Preheating the Gasoline-air Mixture on the Flame Propagation Velocity.

The authors studied the effect of preheating the fuel mixture on the flame propagation velocity in laminar and turbulent flows. The temperature of the mixture was varied from 17 to 227°C.

It was established that the effect of preheating on the flame propagation velocity is the same in turbulent and laminar flows. There are 7 figures and no references.

Tsukhanova, O.A. (Laboratory for the Intensification of Furnace Processes). Calculation of the Summary Reaction Rate and Flame Velocity in Gas Mixtures 81

The object of this study is the development of approximation methods for the calculation of the total reaction rate without restricting the order of reaction. The normal flame speed theory of Ya. B. Zel'-dovich, N.N. Semenov, and D.A. Frank-Kamenetskiy was taken as the base for this work. The author gives the equation for the total reaction rate, the equation for normal combustion and its approximate solution, and calculation of the kinetics of CO-air and CO-oxygen combustion with a comparative table of results by various authors (table 1). These data are compared with results of N.A. Karzhavina (fig. 2). Finally, the calculation of flame propagation velocities

the existence of reduction. This method was suggested by M.V. Keldysh in the form of an approximation method for the solution of combustion problems based on the averaging of differential equations for one of the independent variables. The method of averaging permits the solution of problems for gas formation in presence of several simultaneous space and surface reactions. There are no references.

Khitrin, L.N. (Laboratory for the Intensification of Furnace Processes). Possible Role of Catalytic Surface Combustion During the High-Temperature Combustion of Gases in a Flow 123

The author studied the effect of surface combustion in a high-temperature burning of gases. A tunnel type burner was used with a layer of fine-grained material. It was determined that under such conditions the surface catalytic combustion does not have a noticeable effect and the process is termed an ordinary space combustion of a flow. The fine-grained layer will reveal surface processes in the case of high catalytic activity materials. There are 3 equations, 1 figure, and no references.

AVAILABLE: Library of Congress TM/ksv
Card 18/18 12-3-58

SOV/112-59-20-41798

Translation from: Referativnyy zhurnal. Elektrotekhnika, 1959, Nr 20, p 16 (USSR)

AUTHOR: Khitrin, L.N.

TITLE: The Theory of Burning of a Current of Gas Mixtures and Critical Characteristics of its Ignition

PERIODICAL: V sb.: Teoriya i praktika szhiganiya gaza. Leningrad, Gostoptekhizdat, 1958, pp 94-115

ABSTRACT: It is pointed out that usually two processes of stationary flame propagation can be observed: a normal one (in a resting or laminar medium) and a turbulent one, which plays the main part in technical processes, but the theory of which is little developed as yet. Two cases of the burning process of the current in the case of direct-stream delivery of the mixture into the chamber are analyzed: ignition at the periphery of the stream and ignition at the current axis. The task of combustion intensification is the simultaneous reduction of the total torch length and the increase of forcing. The latter problem is solved by the conditions of current ignition. The magnitude of the heat liberation per unit volume of combustion space

Card 1/2

KHITRIN, L.N., otv.red.; PRUDNIKOV, A.G., red.izd-va; GUS'KOVA, O.M., tekhn.red.

[Kinetics and propagation of flame; a collection of reports delivered at the All-Moscow Seminar on Combustion conducted by the Power Engineering Institute of the Academy of Sciences of the U.S.S.R.] Kinetika i rasprostranenie plameni; sbornik dokladov na obshchemoskovskom seminare po goreniiu pri Energeticheskom institute AN SSSR. Moskva, 1959. 51 p. (MIRA 12:5)

1. Akademiya nauk SSSR. Energeticheskiy institut. 2. Chlen-korrespondent AN SSSR; predsedatel' soveta Obshchemoskovskogo seminara po goreniyu pri Energeticheskom institute AN SSSR (for Khitrin).
(Combustion) (Chemical reaction, Rate of)

KHITRIN, L.N., otv.red.; KOSYKH, R.I., red.izd-va; KNOROV, M.M., red.izd-va; KASHINA, P.S., tekhn.red.

[Combustion in a turbulent flow; discussion in the Moscow Seminar on Combustion at the Power Institute of the Academy of Sciences of the U.S.S.R.] Gorenie v turbulentnom potoke; diskussiia na Obshchemoskovskom seminare po goreniiu pri Energeticheskom institute AN SSSR. Moskva, 1959. 167 p. (MIRA 12:8)

1. Akademiya nauk SSSR. Energeticheskiy institut. 2. Chlen-korrespondent AN SSSR (for Khitrin).

(Combustion) (Turbulence)

KHITRIN, L.N.

24(6) PHASE I BOOK EXPLOITATION SOV/3201

Akademiya nauk SSSR. Energeticheskiy institut

Gazodinamika i fizika goreniya (Gas Dynamics and Physics of Combustion) Moscow, Izd-vo AN SSSR, 1959. 170 p. Errata slip inserted. 3,000 copies printed.

Resp. Ed.: A.S. Predvoditelev, Corresponding Member, USSR Academy of Sciences; Ed. of Publishing House: A.L. Bankvitser; Tech. Ed.: I.N. Guseva.

PURPOSE: The book is intended for physicists and engineers in various industries, interested in gas dynamics, combustion physics and related fields.

COVERAGE: This collection of articles represents the first attempts of the laboratory to investigate supersonic wave flow processes of combustion and explosion. The collection contains thirteen articles by personnel of the combustion laboratory of the Power Engineering Institute, Academy of Sciences, USSR, which treat the following aspects of combustion: 1) problems of turbulent combustion of gas mixtures; 2) the influence of turbulization of flow on the combustion process of gas mixtures; 3) theoretical investigations of inconsistencies in hydrodynamic theories of combustion and explosion, and the methods of Riemann, Hugoniot and Hadamard for describing front processes. The editor states that strict criteria have been established for separating from a class of physical phenomena a special class characterized by the frontal wave motion process. These criteria purportedly offer a new fundament to the identical and kinetic (compatability) conditions of wave motion of Hadamard and permit their generalization for the case of varying discontinuities of these or other physical quantities of an explosion wave front. No personalities are mentioned. References accompany each article.

PHASE I BOOK EXPLOITATION SOV/3407

Akademiya nauk SSSR. Energeticheskiy institut im. G.M. Krzhizhanovskogo

Problemy energetiki; sbornik posvyashchayetsya akademiku G.M. Krzhizhanovskomu (Problems of Power Engineering; Collection of Articles Dedicated to Academician G.M. Krzhizhanovskiy) Moscow, 1959. 851 p. Errata slip inserted. 2,500 copies printed.

Eds. of Publishing House: B.D. Antrushin, P.V. Dubkov, P.I. Dubkov, and S.M. Moyzhes; Tech. Ed.: T.A. Prusakova; Editorial Board: A.V. Vinter, Academician (Deceased), V.I. Popkov (Resp. Ed.) Corresponding Member, Academy of Sciences USSR, V.I. Veyts, A.S. Predvoditelev, M.A. Styrikovich, Z.F. Chukhanov, N.B. Bogdanova, Candidate of Technical Sciences, B.K. Krylov, Candidate of Technical Sciences, M.M. Lebedev, Candidate of Technical Sciences, and I.N. Sushkov.

PURPOSE: This collection of articles is intended as a tribute to the memory of Academician G.M. Krzhizhanovskiy.

COVERAGE: The collection contains sixty articles by former students and coworkers of the deceased Academician. The articles deal with problems of a wide range of subjects in the field of power engineering: problems of the regional development of electrical and thermal power engineering, power engineering technology, and the physics of combustion. No personalities are mentioned. References are given after most articles.

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Khitrin, L.N.

SOV/170-59-5-16/18

11(2)

AUTHOR: Khitrin, L.N.

TITLE: On the Problem of Regularities in Ignition of Gas Mixtures in a Rapid Flow (K voprosu o zakonomernostyakh zazhiganiya gazovykh smesey v bystrom potoke)

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1959, Nr 5, pp 110-117 (USSR)

ABSTRACT: This is a report of the author in the 7th International Symposium on Combustion. It represents a generalization of a previous paper of this author and S.A. Gol'denberg [Ref 1] in which a theory of thermal ignition by an incandescent body was expounded under an assumption that the intensity of heat elimination is the same throughout the entire surface of a body. Under condition of high speeds of circumfluent gases this condition is not fulfilled, and the present paper takes into consideration the variable intensity of heat elimination from different parts of an incandescent body. The following cases of ignition are discussed: 1. The ignition from a flat wall or a thin plate being streamlined lengthwise; 2. The ignition in a tube from an incandescent wall; 3. The ignition by a body of finite thickness, and 4. The ignition by a body of revolution. It is shown that the length of the incandescent surface of an igniting body is the factor which determines complete breaking

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KHITRIN, L.N.

paper submitted for the 8th Intl Symposium on Combustion, Pasadena, California, 29 August - 2 September, 1960.

A N. Dremin	--	Detonation Parameters
P F Pokhil	--	The Mechanism of Combustion of Colloidal Powders
E S Shchetinkov	--	The Combustion Mechanism and Burning Velocity in a Turbulent Flow
S M Kogarko	--	On the Burning Probability for Droplets of Liquid Atomized Fuel in a Turbulent Flow
S M Kogarko	--	Amplification of Compression Waves in the Combustion Zone
PLYUKHIN, B.I.	--	On the Stationary Theory for Heat Balance of Powder and Explosive Condensed Phases
Yu N Denisov Ya K Troshin	--	On the Mechanism of Detonative Combustion
E S Golovina G P Khaustovich	--	The Interaction of Carbon with Carbon Dioxide and Oxygen at Temperatures up to 3000°K
KHITRIN, L.N. RAVICH, M.B. KOTOVA, L.L.	--	The Carbon Residue Burning Characteristics of Solid Fuel
O A Tsukhanova	--	The Investigation of the State of Explosion Products Behind the Shock Wave
V A Popov ANISIMOV, V.Ye.	--	On the Ionization in the Flame Front

KHITRIN, L.N., otv.red.; GRIGOR'YEV, Ye.N., red.izd-va; KARPOV, V.N., tekhn.red.

[Combustion at low pressures and some problems connected with flame stabilization in one- and two-phase systems] Gorenie pri ponizhennykh davleniiakh i nekotorye voprosy stabilizatsii plameni v odnofaznykh i dvukhfaznykh sistemakh. Moskva, 1960. 85 p. (MIRA 13:9)

1. Akademiya nauk SSSR. Energeticheskiy institut.
(Combustion) (Flame)

SPEYSHER, VLADIMIR Anatol'yevich; KHITRIN, L.N., red.; SHUKHER, S.M., red.; LARIONOV, G.Ye., tekhn.red.

[Burning of natural gas in industry and at electric power plants] Szhiganie gaza na elektrostantsiiakh i v promyshlennosti. Pod red. L.N.Khitrina. Moskva, Gos.energ.izd-vo, 1960. 198 p. (MIRA 14:3)

1. Chlen-korrespondent Akademii nauk SSSR (for Khitrin).
(Gas, Natural)

S/196/61/000/006/011/014
E194/E435

AUTHORS: Khitrin, L.N., Ravich, M.B., Kotova, L.L.

TITLE: Procedure and results of determination of the combustion constant of pulverized fuels

PERIODICAL: Referativnyy zhurnal, Elektrotekhnika i energetika, 1961, No.6, p.9, abstract 6G58. (Sb. 3-e Vses. soveshchaniye po teorii goreniya. T.2.,M., 1960, pp.123-130)

TEXT: In determining the combustion constant the accuracy of the results chiefly depends upon the process being as isothermal as possible. Ballasting the gas flow with finely divided material was selected as an effective method of solving this problem. For this purpose the fuel under investigation may be used either alone or mixed with inert material. In either case, it is important that the solid phase should be present in sufficient quantity to ensure "absorption" of the total heat of reaction without appreciable heating of the system. Ballasting the flow with dust of the actual fuel under investigation is to be preferred because there is then considerable excess of fuel and the

Card 1/3

Procedure and results of ...

dust particles burn very little. Accordingly, the dimensions of the dust particles and their reacting surface may be considered to remain unchanged, which simplifies calculation of the constant. High fuel concentration also permits clearer observation of possible chemi-sorption processes. Observation of the course of the process is simplified because the primary characteristic of combustion is consumption of oxygen in the flow. Accordingly, in making the tests it is only necessary to register the changes in composition of the gaseous product along the flow. The experimental equipment consisted of an electrically heated vertical tube 800 mm long and 8 mm internal diameter. Pulverized fuel in a flow of oxidizing medium (air or nitrogen-oxygen mixture) which had first been heated to the test temperature was delivered to the tube, the dust was entrained by the flow and carried up the tube. Temperature differences of 10 to 15°C were permitted between the start and end of the tube. The excess oxygen coefficient was 0.035 to 0.10. Tests were made with coked, powdered, Moscow Basin coal and with milled peat previously heat-treated for six hours at temperatures of about 600 and 800°C. The dimensions of the mean fractions ranged from 65 to 367 microns. The initial oxygen

Procedure and results of ...

concentration ranged from 3.7 to 20.9%, the dust concentration from 0.5 to 8.5 g per litre at n.t.p. and the temperature from 370 to 700°C. It was established that the oxygen consumption and the amount of gaseous oxides formed are not linear functions of the effective oxygen concentration. The rate constants of these processes do not depend on the dimensions of the particles. The gaseous reaction product with oxygen is CO_2 (with peat). On burning coke of Moscow Basin coal the oxygen is strongly absorbed by the coke, the process is of a chemi-sorption character. Sorbed oxygen is returned to the gaseous phase in the form of CO_2 after the fuel has been heated to a temperature higher than that of the process. An equation is given for the total oxygen consumption. There are 4 references.
Abstracted by S.Tager.

[Abstractor's note: Complete translation]

Card 3/3

S/124/61/000/011/039/046
D237/D305

AUTHOR: Khitrin, L.N.

TITLE: On laws and indices of combustion of stream of solid fuel in the filtering attachments

PERIODICAL: Referativnyy zhurnal, Mekhanika, no. 11, 1961, 106, abstract 11B705 (Sb. 3-ye Vses. soveshchaniye po teorii goreniya, v. 2, M., 1960, 161 - 168)

TEXT: A scheme was examined of combustion of streams of powdered and fine-grained solid fuel in the filtering attachments (a layer of refractory pieces, of conical or cylindrical shape) with liquid slag removal. Based on generalized equations of zone combustion, a theoretical analysis is given of combustion laws for the investigated scheme. Analysis of relationships obtained indicates the possibility of obtaining, under those conditions, very localized zones of oxygen consumption and consequently, high thermal stresses. [Abstractor's note: Complete translation].

Card 1/1

BLINOV, Vasiliy Ivanovich; KHUDYAKOV, Georgiy Nikitovich; KHITRIN, L.N., otv.red.; GORSHKOV, G.B., red.izd-va; UL'YANOVA, O.G., tekhn.red.

[Diffusion combustion of liquids] Diffuzionnoe gorenie zhidkostei. Moskva, Izd-vo Akad.nauk SSSR, 1961. 206 p. (MIRA 14:3)

1. Chlen-korrespondent AN SSSR (for Khitrin).
(Liquid fuels)

KHITRIN, L. N.

10

BAZHENOVA, T. V. - "Evaluation of time of relaxation of carbon dioxide dissociation according to shock tube experiments", and "Determination of the dissociated CO_2 flow condition after the normal shock on the rarefaction wave arising while flowing around a protuberant angle"

GOLDENBERG, S. A. - "Ignition in the flow"

KHITRIN, Lev Nikolayevich - "Diffusion effect on ignition characteristics of gas mixtures ignited by a heated surface"

KNORRE, V. G. and KOZLOV, G. I. - "One-impulse shock tube investigation of the kinetic thermal decomposition of methane"

KOZLOV, G. I. - "Calculation of normal rate of flame propagation of methane and some other hydrocarbons"

LOBASTOV, U. S., and BAZHENOVA, T. V. - "Research on absorption of radio waves by air following the shock wave"

NABOKO, I. M. - "The problem of ignition in supersonic gas flow decelerated at an obstacle"

SALAMANDRA, G. D., and SEVASTYANOVA, I. K. - "Amplification of the shock waves during transition through the flame front", and "Formation of weak shock waves before the flame front and their role in organizing the process of explosive mixture burning in tubes."

Reports to be submitted for the 9th Intl. Symposium on Combustion, Ithaca, New York 27 Aug - 1 Sep 1962.

All affiliated with Inst. of Energetics im. G. M. Krzhizhanovskiy, Moscow.

43533

S/204/62/002/005/007/007
E202/E192

11.134-0

AUTHORS: Gulyayev, G.V., Kozlov, G.I., Polak, L.S., Khitrin, L.N., and Khudyakov, G.N.

TITLE: Conversion of methane into acetylene in a plasma jet

PERIODICAL: Neftekhimiya, v.2, no.5, 1962, 793-794

TEXT: Acetylene synthesis was studied quantitatively in a constricted arc plasma torch. The working parameters of the latter were as follows: W-cathode, Cu - water cooled nozzle-anode, input 15 kW, power to plasma 9.5-10.0 kW, current 280 A, working gas - argon, at 60.3-58.0 litre/min. Methane was introduced above the W-electrode at rates 6.7-49.7 litre/min. The temperature of pure Ar plasma was calculated approximately at 10 000 °K, and the time of residence of methane in plasma approximately 10^{-5} sec. The product gases were sampled along the plasma jet axis at various distances and analysed chromatographically. In contrast to the results of H.W. Leutner and C.S. Stokes (Ind. Engng Chem., v.53, 1961, 341) the authors found that almost 100% of methane had reacted and the conversion into acetylene was approximately 80%.

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Conversion of methane into ... S/204/62/002/005/007/007
E202/E192

The authors claim that their present rate of energy consumption of 15 kW.hr. per one m^3 of acetylene could be considerably improved by replacing the argon with methane or hydrogen and increasing the power of the plasma torch.
There are 1 figure and 1 table.

ASSOCIATION: Institut neftekhimicheskogo sinteza AN SSSR
(Institute of Petrochemical Synthesis AS USSR)
Energeticheskiy institut im. G.M. Krzhizhanovskogo
(Power Engineering Institute imeni G.M. Krzhizhanovskiy)

SUBMITTED: July 14, 1962

Card 2/2

S/170/62/005/001/002/013
B104/B102

AUTHORS: Khitrin, L. N., Ravich, M. B., Kotova, L. L.

TITLE: Methods and results of a study of the kinetic characteristics of combustion of powdery fuel in a flow

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, v. 5, no. 1, 1962, 7-12

TEXT: A device designed for studying the combustion of powdery fuel in a gas flow under isothermal conditions is described. Its main part is a vertical, electrically heated, stainless steel reaction tube of 800 mm length and 8 mm inner diameter. A screw conveyer transports fuel from a bunker into the tube and at the same time air or a nitrogen-oxygen mixture is blown through. The mixture is heated to a certain temperature in the tube (maximum 750°C). The ratio between the oxygen used in the flow during the experiment and the theoretically necessary value amounted to 0.035-0.10. A section of 500 mm of the reaction tube could be investigated. Gas samples were taken at the end of the tube. The conditions for sufficient mixing of the gas flow with fuel particles and also the isothermal reaction conditions in the tube were studied in

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Methods and results of a study of...

preliminary tests. Nearly isothermal burning conditions were reached with 5 g of fuel per standard liter. The following types of fuel have been investigated: peat coke, coke of Moscow coal, anthracite and oil shale coke residue. The activity of the fuels investigated was mainly a function of temperature and duration of coking. The tests were limited to materials produced by the following two methods: 1) 6-hr coking at 600°C with exclusion of air; 2) 6-hr coking at 800°C with exclusion of air. The content of O_2, CO_2, and CO was determined from gas samples. The results show that during the reaction of oxygen with fuel complex sorption processes take place, which will have to be studied more closely before the burning processes can be calculated. There are 4 figures and 12 references: 10 Soviet and 2 non-Soviet. The two references to English-language publications read as follows: Rhead T. E. and Wheeler R. V. Journ. Chem. Soc., 97, 2178, 1910; 99, 1140, 1911; 103, 461, 1210, 1913; Lambert. Trans. Faraday Soc., XXXII, part 2, 452, 1936.

ASSOCIATION: Energeticheskiy institut im. G. M. Krzhizhanovskogo, g. Moskva (Institute of Power Engineering imeni G. M. Krzhizhanovskiy, Moscow)

SUBMITTED: July 8, 1961

Card 2/2

KHITRIN, L.N.

Combustion equations of a flow of powdered fuel (coke) in the case of chemisorption of oxygen. Inzh.-fiz. zhur. 5 no.7:23-27 Jl '62. (MIRA 15:7)

1. Energeticheskiy institut imeni G.M.Krzhizhanovskogo, Moskva.
(Combustion) (Sorption) (Differential equations)

KHITRIN, L.N.; RAVICH, M.B.; KOTOVA, L.L.

Oxygen sorption during the combustion of carbon (coke). Inzh.-fiz.zhur. 5 no.8:17-22 Ag '62. (MIRA 15:11)

1. Energeticheskiy institut imeni G.M.Krzhizhanovskogo, Moskva.
(Sorption) (Combustion) (Carbon)

KHITRIN, L. N., and GOLOVINA, ME. S.,

"Vysokotemperaturnoye Vzaimodeyctviye Grafita s Razlichnimi Khimicheski Aktivnymi Gazami. (High Temperature Interaction of Graphite with Different Chemically Active Gases.)"

report presented at the Intl. Symposium on High Temperature Technology held at Asilomar, California, 8-11 Sep 63.

KHITRIN, L. N.

Diffusion processes and characteristics of the ignition of gaseous mixtures by an incandescent body. Inzh.-fiz. zhur. 6 no.1:19-26 Ja '63. (MIRA 16:1)

1. Energeticheskiy institut imeni G. M. Krzhizhanovskogo, Moskva.

(Gases—Diffusion) (Combustion)

KHITRIN, L.N.; KOTOVA, L.L.

Combustion constants for coke from coal of the Moscow region.
Inzh.-fiz.zhur. 6 no.3:58-62 Mr '63. (MIRA 16:6)

1. Energeticheskiy institut imeni G.M.Krzhizhanovskogo, Moskva.
(Combustion) (Coke)

MOSSE, A.L.; KHITRIN, L.N.

Study of a stream of burning carbon particles in a high temperature region. Inzh.-fiz. zhur. 6 no.8:15-21 Ag '63. (MIRA 16:10)

1. Institut teplo- i massoobmena AN BSSR, Minsk.

45177

S/020/63/148/003/035/037
B117/B186

5.1600

AUTHORS: Gulyayev, G. V., Kozlov, G. I., Polak, L. S. Khitrin, L. N., Corresponding Member AS USSR, Khudyakov, G. N.

TITLE: Transformation of methane into acetylene in the argon plasma beam

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 148, no. 3, 1963, 641-643

TEXT: In order to reduce the specific energy consumption during production of acetylene and to achieve a high degree of transformation of methane into acetylene, experiments were made with argon plasma beam. The latter was produced in a 15 kw plasmotron by a stabilized argon discharge ignited between a tungsten cathode and a water-cooled copper anode. Plasma was discharged through a 3 mm jet into the anode. Methane was introduced into the plasma beam through special openings in the jet wall at an angle of 90° to the direction of plasma discharge. Reaction products were tested chromatographically for content of H_2, CH_4, C_2H_6, C_2H_4 and C_2H_2. The dependence of the degree of cracking of methane on its consumption was investigated at 280 a, a power of 9.5 kw and an argon consumption of

Card 1/3

60 l/min. The analysis of gas specimens showed that the specific energy consumption is lower in the center (along the axis) of the plasma beam than in the cross section of the total beam. A sufficiently high degree of cracking could be obtained at the equivalent of 5000°C along the beam axis and a methene consumption of 30 l/min. In this case the specific energy consumption was 15 kwh/m^3 C_2H_2 per 1 Nm^3 of the acetylene produced. 80% cracking in the complete plasma beam could be achieved only at a high specific consumption (~40 kwh/m^3 C_2H_2). This may be traced back to relatively high energy losses in the jet walls. Though the specific energy consumption could not be reduced by increasing the amperage (up to 435 a) a certain reduction of the same (down to 24 kwh/m^3 C_2H_2) could be achieved by using jets of larger diameters (4.5, 7 mm) and simultaneously increasing the plasmotron power (to ~12.5 kw), as well as by shortening the electrode distance. Experiments with 4.5 and 7 mm jets showed that the specific energy consumption would be about 13 kwh/m^3 C_2H_2 in a standard plasmotron of ~70% efficiency and an argon plasma beam. Further possibilities of using plasma beams for endothermal chemical reactions are

Transformation of methane into ...

here investigated: transformation of methane into acetylene in a 200-kw plasmotron with argon, hydrogen and other carrier gases; transformation of propane, butane and the propane-butane fraction in the plasma beam; production of bound nitrogen in the plasma beam. There are 1 figure and 2 tables.

ASSOCIATION: Institut neftekhimicheskogo sinteza Akademii nauk SSSR (Institute of Petrochemical Synthesis of the Academy of Sciences USSR); Energeticheskiy institut im. G. M. Krzhizhanovskogo (Power Engineering Institute imeni G. M. Krzhizhanovskiy)

SUBMITTED: October 13, 1962

Card 3/3

REVZIN, I.S.; KHITRIN, L.N.

Investigation of high-temperature reduction of carbon dioxide in a pulverized coke flow. Inzh.-fiz.zhur. 6 no.10:76-82 O '63. (MIRA 16:11)

1. Institut teplo- i massoobmena, Minsk.

KHITRIN, L. N.; MOIN, F. B.; SMIRNOV, B. B.; SHEVCHUK, V. U.

"Peculiarities of laminar and turbulent flame-backs."

report submitted to 10th Intl Symp on Combustion, Cambridge, UK, 17-21 Aug 64.

Inst Chemical Physics, AS USSR, Moscow

KHITRIN, L.N.; MOIN, F. B.; SMIRNOV, B. B.; SHEVCHUK, V. U.

"Peculiarities of laminar and turbulent flame flashbacks."

report presented at the 10th Intl Combustion Symp, Cambridge, UK, 17-21 Aug 64.

Krzhizhanovskiy Inst of Power Engineering, Moscow.

BUZNIKOV, Yevgeniy Fedorovich; RODDATIS, Konstantin Fedorovich; SPEYSHER, Vladimir Anatol'yevich; KHITRIN, L.N., red.; MURZAKOV, V.V., red.

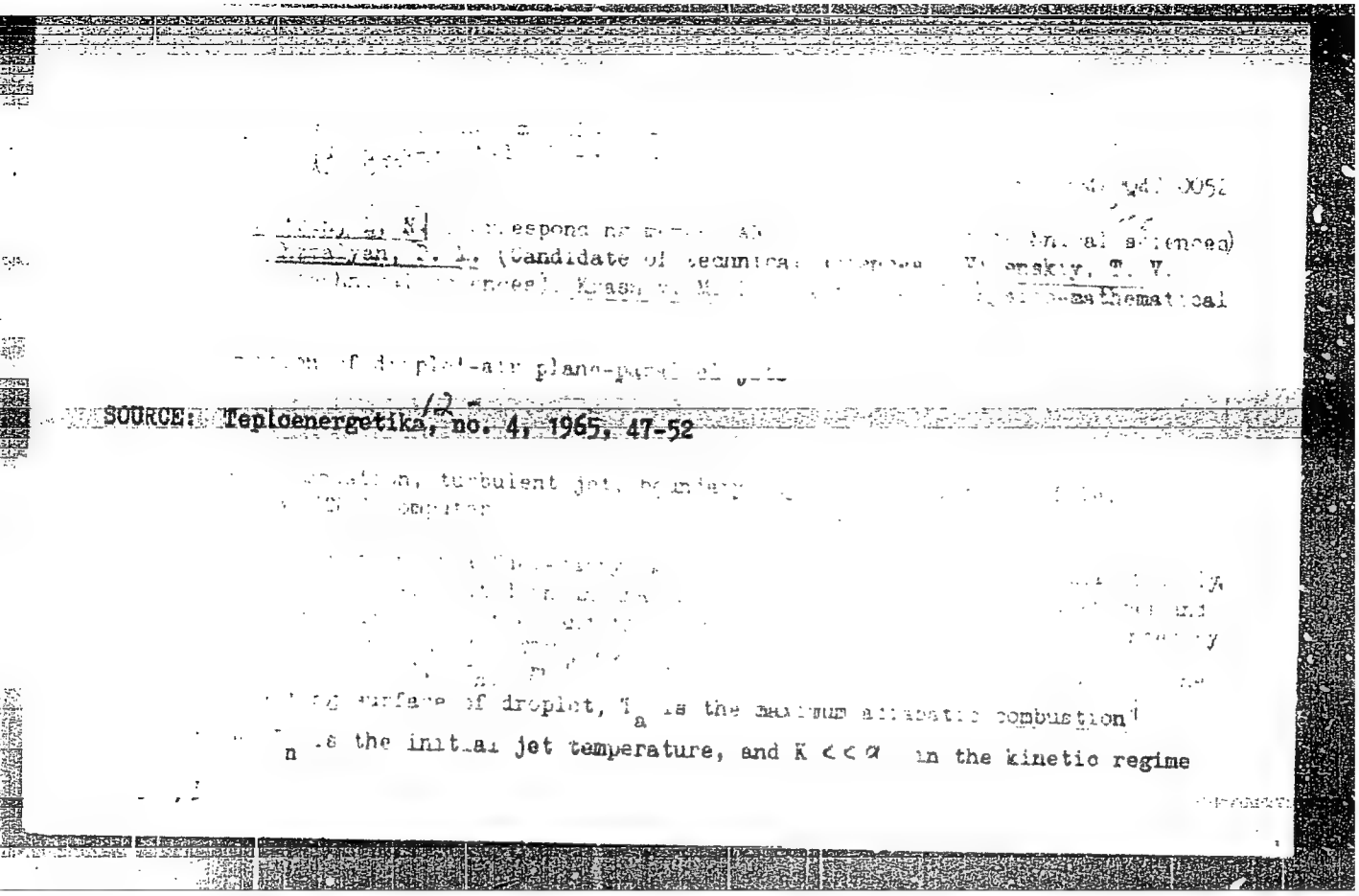
[Conversion of DKV and DKVR boilers to gas operation] Perevod kotlov DKV i DKVR na gazoobraznoe toplivo. Moskva, Energiia, 1964. 190 p. (MIRA 17:12)

1. Chlen-korrespondent AN SSSR (for Khitrin).

RAUSHENBAKH, Boris Viktorovich; BELYY, Sergey Andreyevich; BESPALOV, Ivan Vanifat'yevich; BORODACHEV, Vadim Yakovlevich; VOLYNSKIY, Mark Semenovich; PRUDNIKOV, Aleksandr Grigor'yevich; KHITRIN, L.N., retsenzent; SHEYNFAYN, L.I., red.

[Physical principles of the working process in combustion chambers of ramjet engines] Fizicheskie osnovy rabochego protsessa v kamerakh sgoraniia vozdushno-reaktivnykh dvigatelei. [By] B.V.Raushenbakh i dr. Moskva, Mashinostroenie, 1964. 525 p. (MIRA 17:7)

1. Chlen-korrespondent AN SSSR (for Khitrin).



SOURCE: Teploenergetika, no. 4, 1965, 47-52

L 38964-65
ACCESSION NR: AP5008820

and $>>x$ in the diffusion regime. The turbulent flow energy equation is given by

$$c_{om}\frac{273}{T_1}\frac{a_1}{x}\left\{xF'\frac{\partial T}{\partial x}-\left[\frac{\partial^2 T}{\partial\varphi^2}-\frac{\partial T}{\partial\varphi}\left(\frac{1}{T}\frac{\partial T}{\partial\varphi}\right)\right]\times\right.$$
$$\left.\times\left[F''+F'\left(\frac{1}{T}\frac{\partial T}{\partial\varphi}\right)\right]\right\}-$$
$$K_0 f_0\cdot 273^2\eta\left(\frac{a_2-1+\eta}{a_2}\right)\left(\frac{T_0-T}{T_0-T_s}\right)^n\frac{1}{T^2}e^{-E/RT}$$

, nondimensionalized and written in a form for the analog computer [illegible] ... T ... T_1, T ... [illegible]

... distances. These curves show maxima ... temperatures at the external boundaries of the jet. The increase in temperature is accompanied by a ... in the reacting substance. Curves of the ... of the parameter ... versus ... the nondimensional temperature ... straight lines for a given $\psi=\frac{\varphi-\varphi_s}{\varphi_0-\varphi_s}$. Orig. art. has: 26 formulas and 5 figures.

ASSOCIATION: Moskovskiy energeticheskiy institut (Moscow Heat Power Institute)

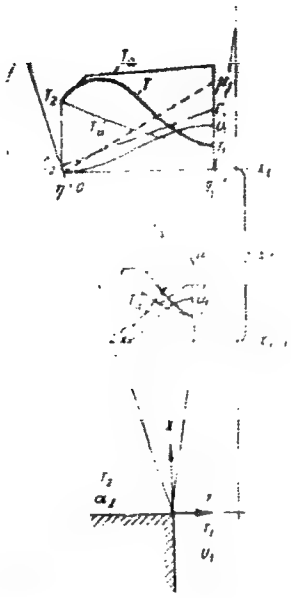
SUBMITTED: 00 ENCL: 01 SUB CODE: ME, FP

NO REF SOV: 003 OTHER: 000

Card 2/3

AP5008820

ENCLOSURE: 01



...chema of ignition in a
...yer of a turbulent stream
...ns of concentrations of fuel
...are shown arbitrarily--with-
...nation

KHITRIN, N.N.

Designing universal section electric power networks in machinery manufacturing plants. Prom.energ. 15 no.5: 57-58 My '60. (MIRA 13:7)
(Electric networks) (Machinery industry)

KHITRINA, G.V.

Surgical methods of treating pulmonary hemorrhage in tuberculosis of the lungs. Prob.tub.no.4:69-70 Jl-Ag '55. (MLRA 8:10)

1. Iz Beloyarskogo tuberkuleznogo sanatoriya (Altayskiy kray)
(TUBERCULOSIS, PULMONARY, compl.
hemorrh.surg.)
(HEMORRHAGE
lungs, caused by pulm.tuberc.surg.)

DUBILEY V.V., kand. med. nauk; KHITRINA, G.V.

Characteristics of the clinical aspects of silicosis. Sov. med. 27 no.11:39-41 N '63 (MIRA 18:1)

1. Iz gospital'noy terapevticheskoy kliniki (zav. - dotsent V.V. Dubiley) Altayskogo meditsinskogo instituta.

KHITRINA, G. V.: Master Med Sci (diss) -- "Postoperative hemorrhage in the operation of extrapleural pneumonolysis". Barnaul, 1958. 10 pp (Tomsk State Med Inst), 200 copies (KL, No 4, 1959, 132)

KHITRINA, G. V., kand. med. nauk

Cavernotomy in tuberculosis of the lungs. Probl. tub. no.2:104-105 '62. (MIRA 15:2)

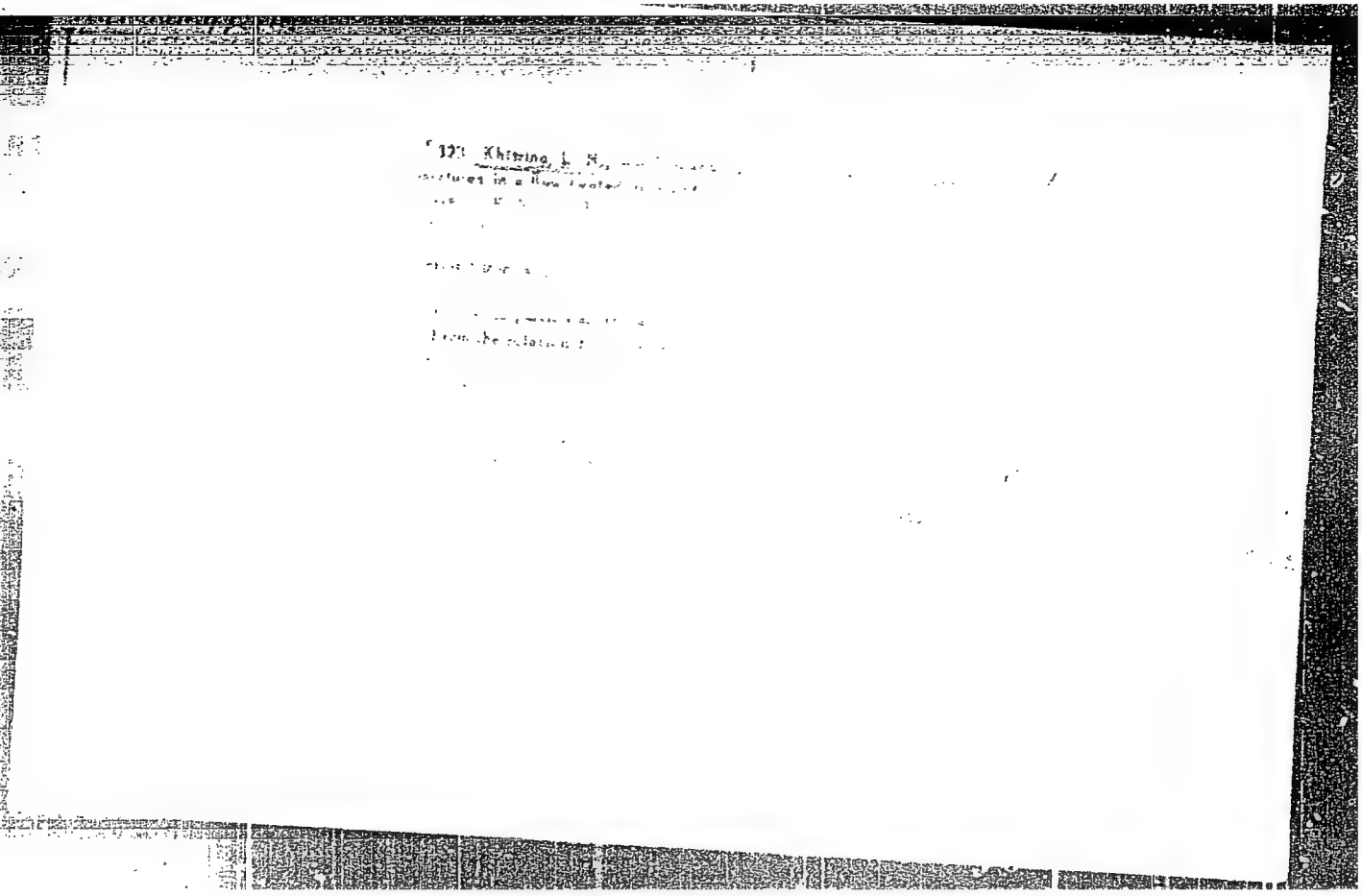
1. Iz Barnaul'skogo gorodskogo tuberkuleznogo dispansera (glavnyy vrach P. M. Gassan).

(TUBERCULOSIS) (LUNGS—SURGERY)

KHITRINA, G.V., kand. med. nauk

Death caused by novocaine intolerance. Khirurgiia 40 no.7:130 Jl '64. (MIRA 18:2)

1. Barnaul'skiy gorodskoy protivotuberkuleznyy dispanser (glavnyy vrach P.M. Gassan).



KHITRINA, N. A.

KHITRINA, N. A. — "Complex Formation of Carbonyl Compounds with Other Organic Substances." Min Higher Education USSR. Tomsk Order of Labor Red Banner Polytechnic Inst imeni S. M. Kirov. Chair of Organic Chemistry. Tomsk, 1955. (Dissertation for the Degree of Candidate of Chemical Sciences)

SO: Knizhnaya Letopis', No 1, 1956, pp 102-122, 124

USSR/ Electronics - New inventions

Card 1/1 Pub. 89 - 14/31

Authors : Khitrinsky, O.

Title : The results of the contest for the best efficiency idea (in communications)

Periodical : Radio 11, 23-24, Nov 1954

Abstract : The results of a contest organized in 1953 - 1954 by the Ministry of Communications for inventions leading to increased efficiency in radio communications are described. Inventions demonstrated in this contest and the names of the winners are given. Top awards were made for a new line-operation fault-detector, a new remote-control measuring method of determining the attenuation in radio-relay feeder lines, and for a combination wire-cutter and plyer. Several inventions were found to deserve honorable mention. Among these, a machine for mechanical installation of wire-line supports is described. Diagrams.

Institution : ...

Submitted : ...

USSR/ Agriculture
Plant Breeding
Wheat

Jul/Aug 48

"Possibility of Controlling the Variety of Hybrid Species of Wheat," V. F. Khitrinskiy, Cand Biol Sci, All-Union Agr Genetic Inst, Odessa, 17 pp

"Agrobiologiya" No 4

Breeding hybrids by crossing winter wheat with vernalized wheat and planting it in spring or fall makes it possible to obtain yields which are either winter or vernal with increased or decreased resistance to freezing. Crossed winter and vernalized wheat should be vernalizing at low temperatures to

PA 43/49T4

USSR/Agriculture (Cmtd) Jul/Aug 48

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obtain winter wheat and at higher temperatures (+15 to 20° C) to obtain vernalized wheat. Characteristics of hybrid wheat will vary, depending on type of wheat used as female component, as characteristics of the maternal side of the pair seem dominant.

30872. KHITRINSKIY, V. F.

Napravlennoye izmeneniye nasledstvennosti rasteniy putem vospitaniya, kak metod selektsii (Izmeneniye ozimykh pshenits i yachmenya v yarovyye). V sb: Nauch. trudy Vsesoyuz. selekts.-genet. in-ta im. Lysenko. M., 1949, s. 197-220.

KHITRINSKIY, V. F.

KHITRINSKIY, V.F., kand. biol. nauk.

Significance of light for the development of frost-resistant wintering forms from spring rye and spring wheat. Agrobiologiia no.6:23-33 N-D '57. (MIRA 10:12)

1. Vsesoyuznyy selektsionno-geneticheskiy institut, Odessa.
(Plants, Effect of light on) (Plants--Frost resistance) (Grain)

KHITRINSKIY, V. F., Doc Agric Sci (diss) -- "Directed change in the heredity of plants by means of cultivation as a method of selection". Kiev, 1959. 43 pp (Min Agric Ukr SSR, Ukr Acad Agric Sci), 150 copies (KL, No 23, 1959, 169)

KHITRINSKIY, V.F., doktor sel'skokhoz.nauk

Changing nonwintering peas into wintering peas through controlled modification of heredity. Agrobiologiia no.6:860-865 N-D '60.
(MIRA 13:12)

1. Vsesoyuznyy selektsionno-geneticheskiy institut, g. Odessa.
(Pea breeding)

KHITRINSKIY, V.F., doktor sel'skokhozyaystvennykh nauk;
TARAN, L.D., kand.sel'skokhozyaystvennykh nauk

Biological characteristics of hybrids obtained without the castration of flowers. Agroibiologiia no.4:493-499 Jl-Ag '61. (MIRA 14:7)

1. Vsesoyuznyy selektsionno-geneticheskiy institut, Odessa.
(Hybridization, Vegetable)

MUSIYKO, A.S., doktor sel'khoz. nauk, otv. red.; BERCHENKO, B.E., red., kand. sel'khoz. nauk; VENGRENOVSKIY, S.I., kand. sel'khoz. nauk, red.; VERESHCHAKA, A.I., kand. sel'khoz. nauk, red.; GARKAVYY, P.F., kand. sel'khoz. nauk, red.; DOLGUSHIN, D.A., akademik, red.; KIRICHENKO, F.G., akademik, red.; PUKHAL'SKIY, A.V., kand. sel'khoz. nauk, red.; SOKOLENKO, N.F., doktor sel'khoz. nauk, red.; KHITRINSKIY, V.F., doktor sel'khoz. nauk, red.; SMIRNOV, F.V., red.; TETYUREVA, I.V., red.; MAKHOVA, N.N., tekhn. red.

[Towards the development of Michurinist agrobiological theories] Za razvitie michurinskoi agrobiologicheskoi nauki; materialy... Moskva, Sel'khozizdat, 1963. 350 p. (MIRA 16:10)

1. Nauchnaya konferentsiya, posvyashchennaya 50-letiyu Vsesoyuznogo Ordena Lenina i Ordena Trudovogo Krasnogo Znameni selektsionno-geneticheskogo instituta imeni T.D. Lysenko. 2. Chlen-korrespondent Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni V.I.Lenina, direktor Vsesoyuznogo selektsionno-geneticheskogo instituta imeni T.D.Lysenko (for Musiyko). 3. Vsesoyuznaya akademiya sel'skokhozyaystvennykh nauk imeni V.I.Lenina (for Kirichenko, Dolgushin). 4. Vsesoyuznyy selektsionno-geneticheskiy institut imeni T.D.Lysenko (for Kirichenko, Vengrenovskiy, Garkavyy). 5. Glavnyy uchenyy sekretar' prezidiuma Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni V.I.Lenina (for Pukhal'skiy).

(Plant breeding) (Plants, Cultivated)

KHITRINSKIY, V. F.,

"Controlled Modification of Heredity of Non-winterhardy Varieties of Durum Wheat, Pea and Two-row Barley into Winterhardy Crops."

report submitted for the 11th Intl. Congress of Genetics, The Hague, Netherlands, 2-10 Sep 63;

KHITRINSKIY, V.F., doktor sel'skokhozyaystvennykh nauk

Controlled transformation of poorly wintering durum winter wheat, peas, and distichous barley into winter-hardy varieties. Agrobiologiia no.2:202-212 Mr-Ap '63. (MIRA 16:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy selektsionno-geneticheskiy institut, Odessa.
(Field crops--Varieties) (Plants--Frost resistance)

KHITRINSKIY, V.F., doktor sel'skokhoz. nauk

Controlled transformation of heredity in tomatoes by conditioning. Agrobiologia 5:730-737 S-O '64. (MIRA 17:11)

1. Vsesoyuznyy selektsionno-geneticheskiy institut, Odessa.

MAKSHANOV, Sergey Yakovlevich; KHITRINTSEV, Ivan Sergeyevich; BATUROVA, L., red.

[Keeping sheep in pastures and field shelters] Opyt pastbishchno-stroilavogo soderzhaniia ovets. Dushanbe, Irfon, 1964. 45 p. (MIRA 18:4)

1. Direktor Gosudarstvennogo plemennogo rassadnika tadzhikskikh kurdyuchno-sherstnykh ovets Tadzhikskoy SSR (for Makshanov). 2. Direktor Dagana-Kiikskogo eksperimental'nogo khozyaystva Nauchno-issledovatel'skogo instituta sel'skogo khozyaystva Tadzhikskoy SSR (for Khitrintsev).

KHITRO, Ye.V.; KOSTOMAROV, M.I.; OSTAPCHUK, L.I.

Rapid method of detecting Fe_2O_3 in a calcarous-iron compound. Ogneupory 25 no.5:237-238 '60. (MIRA 14:5)

1. Pervoural'skiy dinasovyy zavod.
(Iron oxides—Analysis) (Pyrites—Analysis)

GUBKO, I.T.; SIZOV, I.D.; KOSTOMAROV, M.I.; KHITRO, Ye.V.

Mixing dinas raw materials in model 115 centrifugal pug mills. Ogneupory 28 no.6:245-249 '63. (MIRA 16:6)

1. Pervoural'skiy dinasovyy zavod.
(Refractory materials)
(Mixing machinery)

KHITROV, A.

Meat, Frozen

Standards of natural loss in freezing meat and by products, Khol. tekh. 30 No. 1, 1953

Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.

KONFETOV, V.; KHITROV, A.; DOMRACHEV, B.; UGOL'KOV, K.; BOBROV, N.; RAZIN, V.

This leads to accidents, victims, courts. Za rul. 16 no.10: 14-16 O '58. (MIRA 12:1)

1. Reydovaya brigada zhurnala "Za Rulem" (for all). 2. Gosudarstvennaya avtomobil'naya inspektsiya i BD (for Konfetov, Khitrov). 3. Otdel regulirovaniya ulichnogo dvizheniya g. Moskvy (for Domrachev, Ugol'kov). 4. Korrespondenty zhurnala "Za rulem" (for Bobrov, Razin).

(Drinking and traffic accidents)

ACC NR: AP7000973 SOURCE CODE: UR/0209/66/000/012/0036/0038

AUTHOR: Znamenskiy, M. (Engineer, Major); Khitrov, A. (Engineer, Captain 3d rank)

ORG: none

TITLE: Night aerial photography at supersonic speed

SOURCE: Aviatsiya i kosmonavtika, no. 12, 1966, 36-38

TOPIC TAGS: aerial photography, night photography, high speed photography

ABSTRACT: The authors state that calculations and experience in night photography at supersonic speed, using photoflash bombs for accomplishing photography through the turbulence layer, prove that the best results are obtained when the camera has a small focal length and a large-diameter objective. There should be a minimal deflection of the optical axis from the vertical, and the camera should be positioned in the forward section of the aircraft. Data on the tilt angle (see Fig. 1) for nighttime aerial cameras can be calculated by the formula

$$\alpha = 90^\circ - \operatorname{arctg} \frac{H}{\frac{a}{M} t_3 - \frac{H}{\operatorname{tg}\varphi}},$$

where α is the speed of sound for the flight altitude (m/sec), φ is the angle of the photoflash bomb's departure, H is the aircraft's flight altitude, Hp

Card 1/2

ACC NR: AP7000973

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R000722020012-5

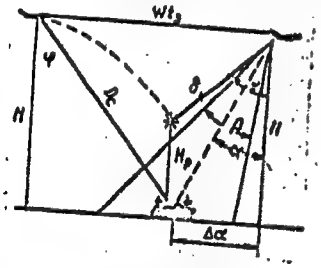

Fig. 1. Night photography at supersonic speeds

is the height of the photoflash bomb's burst, α is the nighttime aerial camera's tilt angle, Dc is the distance the photoflash bomb is dropped, M is the Mach number, and t_3 is the time lag for the timed fuze. Orig. art. has: 3 figures and 4 formulas.

SUB CODE: 14/ SUBM DATE: none/ ATD PRESS: 5110 [WS]

Card 2/2

L 8691-65 EPA(s)-2/EWT(m)/EPF(n)-2/T/EWP(b) Pt-10/Pu-4 RAEM(c)/ASD(m)-3/ASD(f)/
AFMDC RWH/JD/JG/MLK

[illegible]TION NR: AT4043088 S/0000/64/000/000/0447/0460

AUTHOR: Shatalov, A. Ya.; Bondareva, T. P.; Tsy*gankova, L. Ye; [illegible]rov, A. B.

[illegible]: Anodic behavior of zirconium, niobium, and vanadium

SOURCE: Mezhvuzovskaya konferentsiya po anodnoy zashchite metallov [illegible] 1st, Kazan, 1961. Anodnaya zas[illegible] metallov (Anodic [illegible] of metals); doklady* konfer[illegible] [illegible]ennye, 1964, 447-46[illegible]

[illegible] TAGS: zirconium, niobium, vanadium, zirconium anodic behavior, [illegible]m anodic behavior, vanadium anodic behavior, anodic polar[illegible] electrode potential, zirconium [illegible] [illegible]on, vanadium passivation, zirconium an[illegible] [illegible]ization, [illegible] anodic polarization, vanadium an[illegible] [illegible], zirconium [illegible] potential, niobium electrode p[illegible] [illegible] electrode

[illegible]

[illegible] In an attempt to determine passivation conditions of [illegible] niobium and vanadium, their anodi[illegible] has been [illegible]

[illegible]

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ACCESSION NR: AT4043088

2

investigated. Experiments carried out with 99.996% pure zirconium, [illegible] niobium, and 99.7% pure vanadium in solutions of HNO_3, [illegible] and H_2SO_4 showed that [illegible] zirconium and [illegible] the electrolytes tested continuous [illegible] glow with the application of current with a constant density, and they [illegible] with a considerable magnitude, up to 10[illegible] for zirconium [illegible] sulfuric acid. When the current is [illegible] potential [illegible] the original value, but with current [illegible] again it rapidly to the value it previously reached. The sign [illegible] of zirconium and niobium anodes cannot be explained solely [illegible] voltage drop in the growing [illegible] tantalum anode in the section of the polarization curve corresponding to the active process of ionization depend upon the current density. With the increasing pH of the electrolyte, the polarization curves shift towards negative values. Vanadium can be easily passivated in a moderately alkaline solution. In 0.01 N sulfuric acid vanadium passivates at a current density as high as 80 ma/cm^2, the introduction of substances forming insoluble compounds in the

L 8691-65
ACCESSION NR: AT4043048

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...ce of vanadite ions contributes to vanadium passivation. It is ...med that the vanadium passivation is due to the formation of a ...ver of vanadates. With potentials exceeding 0.6 v in an ... the formation of vanadate ... leads to ..., leading ...ion. Orig. art has: ... figures and ... tables.

... None

13Mar64 ATD PRESS: ... ENCL: 00

... MM, GC NO REF SOV: 004 OTHER: 016

S/194/62/000/012/036/101
D201/D308

AUTHOR: Khitrov, A. M.

TITLE: Automatic temperature control of single-stage bell-type furnaces for roll tempering

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 12, 1962, 76, abstract 12-2-152 a (Sb. tr. Gos. soyuzn. in-t po proyektir. agregatov staleliteyn. i prokatn. proiz-va dlya chern. metallurgii, no. 1, 1961, 108-110)

TEXT: The description of the method used by Stal'-proyekt for the control of temperature of bell-type furnaces for tempering of rolls of cold-rolled steel strip. Three thermocouples are used for measurements, one of which A is placed at the wall of the external bell and the two others, B and C, are placed under the inner bell, B on top and C under the rolls. The thermocouple A is connected to an electronic potentiometer with a 2-position control device; B and C are connected to a 2-tap potentiometer adjusting the tap

Card 1/2

corresponding to thermocouple B. The burner gas feeders have two sets of twin valves no. 1 and 2 in series, with output mechanisms controlling the gas and air supplies. Until the required temperature is reached at thermocouple A, both pairs of valves are fully open, after that control is carried out by means of A through the valve pair no. 1, the maximum gas consumption corresponding to the heating power of the furnace, the minimum being approximately one-third of the maximum. After the required temperature has been reached, it is controlled, until the end of the heating period, by thermocouple B and valves no. 2, the fuel consumption falling from one-third of the maximum to zero. After the end of heating and soaking the external bell is removed and a bell is placed on the stand which provides for accelerated cooling in the atmosphere of an inert gas, the cooling being controlled by thermocouple C, connected during the cooling process to a 12-tap potentiometer. The number of pairs of recorders corresponds to that of bells, which assures the economy of the equipment (the number of bells is two-fifths of that of stands). Provision is made for light signalling at the beginning of heating of stands. 1 figure. [Abstracter's note: Complete translation.]

Card 2/2

SLOBODIN, Ya.M.; KHITROV, A.P.

Trimers of allene. Zhur. org. khim. 1 no.9:1531-1536 S '65.
(MIRA 18:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov. Submitted March 5, 1964.

S/079/61/031/012/003/011
D228/D301

AUTHORS: Slobodin, Ya. M., and Khitrov, A. P.

TITLE: The problem of preparing allene

PERIODICAL: Zhurnal obshchey khimii, v. 31, no. 12, 1961, 3945-3947

TEXT: In considering this question the authors note the relatively small amount of previous work devoted to the properties of allenes. This has chiefly been due to the absence of suitable techniques for preparing these hydrocarbons in a sufficiently pure form; according to S. V. Lebendev even traces of 2-bromopropene in allene have a negative influence on its polymerization. Other solvents were, therefore, tested when effecting G. G. Gustavson's reaction between 2,3-dibromopropene and zinc dust: di-iso-propyl ether, dioxane, acetonitrile, diethyl formal, butyl acetate, and iso-amyl acetate. The best results were obtained with butyl acetate and iso-amyl acetate, the yield of allene being 95-98%. The examination of the infrared spectrum of allene synthesized by these reagents

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The problem of preparing allene

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which was photographed on a Hilger H-800 spectrometer, disclosed the absence of any 2-bromopropene and methylacetylene impurities. The authors thus recommend this procedure as a means of obtaining pure allene. There are 1 figure, 1 table and 6 references: 3 Soviet-bloc and 3 non-Soviet-bloc. The references to the English-language publications read as follows: A. T. Blomquist and J. A. Verdol, J. Amer. Chem. Soc. 78, 109 (1956); Z. W. Zinnet and W. H. Avery, J. Chem. Phys. 6, 686 (1938).

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov (All-Union Scientific Research Institute of Petrochemical Processes)

SUBMITTED: February 6, 1961

Card 2/2

SLOBODIN, Ya.M.; KHITROV, A.P.

Problems involved in the preparation of allene. Zhur.ob.khim. 31 no.12:3945-3947 D '61. (MIRA 15:2)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhnicheskikh protsessov.

(Allene)

SLOBODIN, Ya. M.; KHITROV, A. P.

Thermal dimerization of allene. Zhur. ob. khim. 33 no.1: 153-157 '63. (MIRA 16:1)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov.

(Allene) (Polymerization)

SLOBODIN, Ya. S.; KNITHOV, A. P.

Hydrogenation of dimethylenecyclobutanes. Zhur. ob. Khim. 34 no.6:1727-1728 Je '64. (MIRA 17:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut neftekhimicheskikh protsessov.

KHITROV, B. N. 23T102

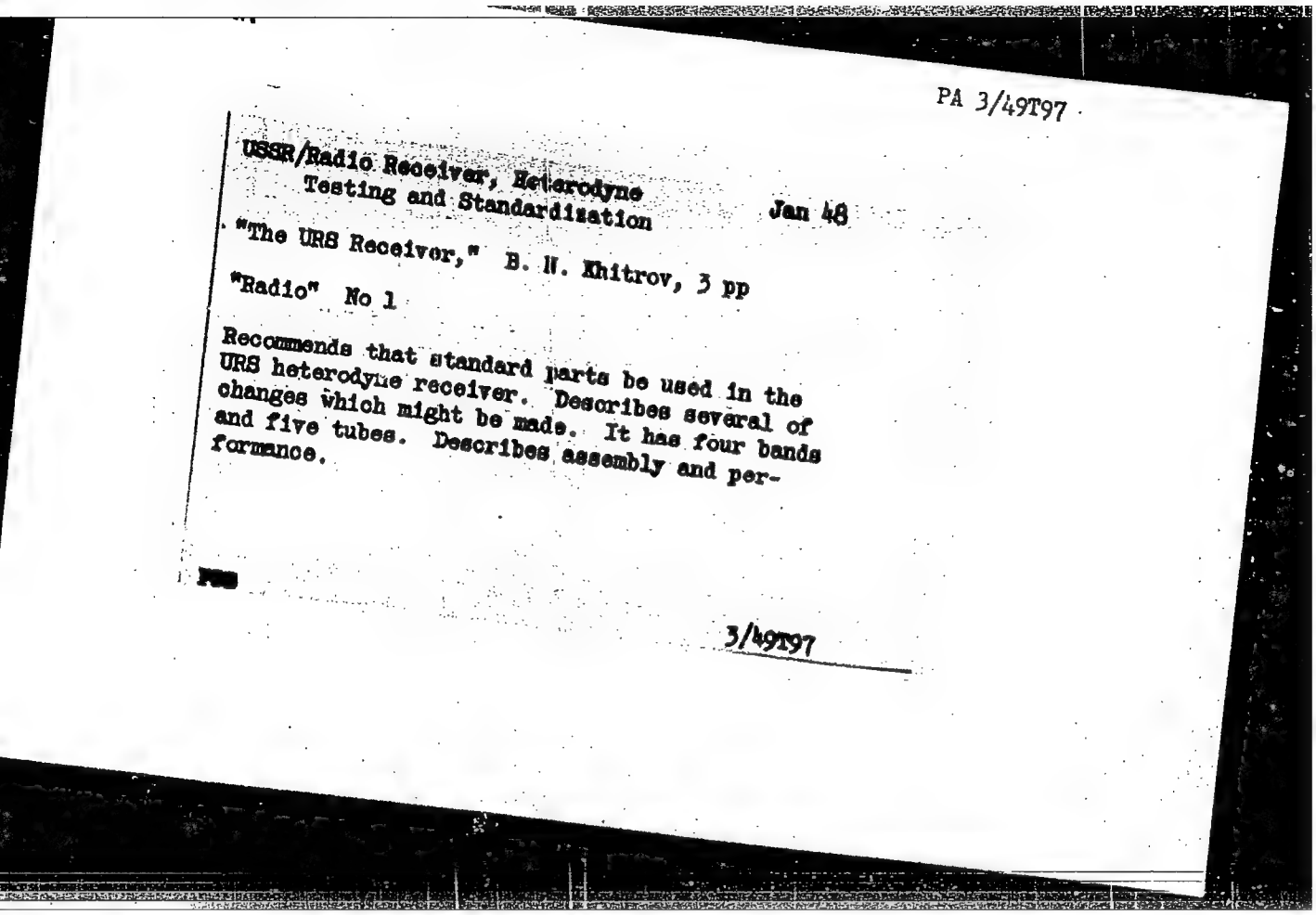
USSR/Radio Jun 1947
Oscillators, Dynatron
Oscillators - Design

"Dynatron Oscillator," B. N. Khitrov, 2 pp

"Radio" Vol XX, No 6

In the last few years a new type of measuring device employing a dynatron oscillator has been developed. This article discusses the operation whereby the circuit of the screen grid of the tube acts as a negative resistance and thereby generates frequencies determined by the factors L_1C_2.

23T102



PA 3/49T97

USSR/Radio Receiver, Heterodyne
Testing and Standardization Jan 48

"The URS Receiver," B. N. Khitrov, 3 pp

"Radio" No 1

Recommends that standard parts be used in the URS heterodyne receiver. Describes several of changes which might be made. It has four bands and five tubes. Describes assembly and performance.

[redacted]

3/49T97

KHITROV, B. N.

PA 78T19

USSR/Electricity
Electrical Equipment
Ohmmeters

Feb 1948

"AC-Operated Ohmmeter," B N. Khitrov, 2½ pp

"Radio" No 2

Describes construction of an ohmmeter which operates from AC circuit.

ID

78T19

KHITROV, B. N. PA 78T98

USSR/Radio Measurements Mar 1948
Radio Equipment

"Radio Amateur's Multimeter," B. N. Khitrov, 4 pp

"Radio" No 3

Instrument permits measurement of voltage, current, and resistance. Describes the principles of the circuit, parts and assembly of the instrument, tuning and scales, and briefs the operation and performance.

ID 78T98

KHITROV, B.

PA 22/49T97

USSR/Radio Receivers -- Headphones Oct 48

"Portable Receiver," B. Khitrov, 3 pp

"Radio" No 10

Describes simple, headphone-type two-tube portable receiver. Includes three drawings and four photographs.

LC 22/49T97

KHITROV, F. M.

"Plastic Surgery of the Nose After Gunshot Wounds by the Filatov Method." Thesis for degree of Cand. Medical Sci. Sub 11 Oct 49, Central Inst of the Advanced Training of Physiciens

Summary 82, 18 Dec 52, Dissertations Presented For Degrees in Science and Engineering in Moscow in 1949. From Vechernyaya Moskva, Jan-Dec 1949.

KHITROV, F. M.

"Simple Method of Total Rhinoplasty by Using Fil-atov's Shaft," Stomtologiya, No.3, 1949. Prof., Central Inst. Advanced Training for Physicians,-c1949-.

Inst.

KHITROV, F.M.

KHITROV F. M.

Odnomomentnoe peresazhenie dvukh stebley Filatova pri formirovanii podborodka. [One-stage operation in restoration of the chin with two Filatov's pedicles] Khirurgiia, Moskva 3 Mar 50 p. 41-5.

1. Of the Central Institute of Traumatology and Orthopedics (Director — Honored Worker in Science Prof. N.N. Priorov) of the Ministry of Public Health USSR.
CLML Vol. 19, No. 1 July 1950

KHITROV, F.M.

BOKSTEYN, I.S;KHITROV,F.M.

Method of surgical treatment of atresia of the hypopharynx. Vest.otorinolar. no.5:68-70 Sept-Oct 1950. (CIML 20:1)

1. Of the Maxillary-Facial Division (Head -- Prof. N. M. Mikhel'son), Central Institute of Traumatology and Orthopedics of the Ministry of Public Health USSR (Director -- Honored Worker in Science Prof. N. N. Priorov), Moscow.

KHITROV, F. M.
Plasticheskiye operatsii na litse (Plastic facial operations) Moskva, Izd-vo Znaniye, 1953.
47 p. illus.
So: N/5
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KHITROV, F.M.

[Plastic surgery of defects on the face and neck by a Filatov pedicle graft] Plasticheskoe zameshchenie defektor litsa i shei filatovskim stebleм. [Moskva] Medgiz, 1954. 245 p. (MLRA 8:2)
(Skin grafting) (Face--Surgery)

KHITROV, F.M., doktor meditsinskikh nauk

Surgical therapy of facial paralysis. Stomatologiia no.5:16-22 S-O '54. (MLRA 7:11)

1. Iz TSentral'nogo instituta travmatologii i ortopedii (dir. chlen-korrespondent AMN SSSR prof. N.N.Priorov) Ministerstva zdravookhraneniya SSSR.

(PARALYSIS, FACIAL
facial, surg.)
(NERVES, FACIAL, paralysis,
surg.)

KHITROV, F. M.

KHITROV, F.M., professor

Activities of Soviet surgeons in the field of plastic surgery of the face and neck. Khirurgiia no.11:84-88 N '54. (MLRA 8:3)

1. Iz TSentral'nogo instituta travmatologii i ortopedii (dir. chlen-korrespondent Akademii meditsinskikh nauk SSSR prof. N.N.Priorov).

(FACE, surgery,
plastic, progr. in Russia)
(NECK, surgery,
plastic, progr. in Russia)
(SURGERY, PLASTIC, surgery,
in Russia)

KHITROV, F.M., professor

Transplantation of the biventer cervicis muscles in lingual paralysis. Stomatologiia no.2:21-24 Mr-Ap '55. (MLRA 8:5)

1. Iz Tsentral'nogo instituta travmatologii i ortopedii (dir. prof. N.N.Priorov).

(TRANSPLANTATION,
biventer cervicis musc. in tongue paralysis)
(TONGUE, paralysis,
surg., transpl. of biventer cervicis musc.)
(PARALYSIS,
tongue, surg., transpl. of biventer cervicis musc.)
(NECK, muscles,
biventer cervicis, transpl. in tongue paralysis)

KHITROV, F.M.; Professor

Extensive combined nasolabial lesions and their therapy. Khirurgiia no.4:7-14 Ap '55. (MLRA 8:9)

1. Tsentral'nyy institut travmatologii i ortopedii (dir.-chlen-korrespondent AMN SSSR prof. N.N. Priorov)
(NOSE, surgery,
plastic nasolabial reconstruction)
(LIPS, surgery
plastic nasolabial reconstruction)

KHITROV, F.M., prof.

Treating congenital cleft palate. Stomatologiia 37 no.4:33-39 Jl-Ag '58 (MIRA 11:9)

1. Iz TSentral'nogo instituta travmatologii i ortopedii (dir. - prof. N.N. Priorov).
(PALATE, CLEFT)